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Albany, NY 12203

EXAMINER
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SUHOL, DMITRY

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3725

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/035,018  
Filing Date: December 27, 2001  
Appellant(s): SERIO, EMILE DI

**MAILED**  
**SEP 13 2007**  
**GROUP 3700**

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Victor A. Cardona  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 3/20/2007 appealing from the Office action mailed 10/20/2006.

**(1) Real Party in Interest**

A statement identifying the real party in interest is contained in the Brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

JP 07-195136	MIKITO	08-1995
JP 05-146841	HIROSHI	06-1993

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

1. Claims 1 and 3 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Mikito in view of admitted prior art and Hiroshi.

Mikito Figure 6 discloses the use of cylinder-type control means 40 for introduction of a multidirectional rod 38 into a workpiece cavity prior to forging and withdrawal of the rod subsequent to forging, as required by the claims. Example 4 and Figures 8 and 9 of Mikito disclose a molding foundry preform 50 having cavities 51, 52. In subsequent forging, tools 64, 65 are inserted in cavities whereby the product is formed with recesses 71, 72. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide such control means to insert and withdraw the multidirectional rods 63, 64 in Mikito Figure 8 in order to avoid the need for manual manipulation of cumbersome and/or heavy tool elements.

Mikito further advises that the perform may require heating between molding and forging. On page4, lines 10 to 19, of the specification it is admitted prior art to reheat a molded preform in a tunnel furnace prior to forging in order to ensure a uniform temperature. It would have been obvious to one having ordinary skill in the art at the time of the claimed invention, to preform the reheating suggested by Mikito with a tunnel furnace, following the teaching of the admitted prior art, in order to ensure a uniform temperature at the time of forging.

Hiroshi discloses forging a molded a preform 60 having cavities 22, 24. In subsequent forging the shape of molded cavities is maintained by rods 52. It would

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have been obvious to maintain the shape of cavities of the molded preform in the forging of Mikito since whether the shape of the preformed cavities is reformed during the forging, as shown in Figures 8 and 9 of Mikito, or maintained in the molded shape, as in Hiroshi, is considered to be an obvious exercise of mechanical design depending on the complexity and location of the cavity profile desired in the product, and not a patentable distinction absent a disclosure of criticality in the solution of stated problems with the formation of a molded cavity and subsequent product recess having a specific profile. It would be particularly obvious to form a molded cavity having the desired final profile in an instance where subsequent forging is applied at a perform location which is remote from the location of the cavity, as shown by Hiroshi Figures 3 and 4 where the cavities are adjacent one end of the molded preform and the heading is performed adjacent the other end.

The molded preform forged in Mikito is considered to be a solid, as recited in Claim 3, since it is a self-sustaining shape. It is noted that Appellant has no disclosure of specific conditions of the molded preform in the forging operation. In addition, Hiroshi clearly shows that the molded preform may be "solid" when forged.

### ***Claim Rejections - 35 USC § 102***

2. Claims 2 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Mikito.

Figure 6 of Mikito discloses a forging die having cylinder-type control means 40 for translating a multidirectional rod 38 into a preformed workpiece cavity 34, as

required by these claims. Whether the workpiece cavity is reshaped in the forging or maintained in shape, as required by Claim 1, is immaterial in a claim to the die itself since the die structure is not limited by the characteristics of the forging perform.

#### **(10) Response to Argument**

Appellants first argument starts at the bottom of page 3 and continues thru page 4, where it is argued that there is no disclosure of at least one shape of at least one recess and a cavity of a preform being substantially maintained by a multi-directional rod during a heading operation, nor is there disclosure of at least one multi-dimensional rod being introduced into preform recesses or cavity by a control means according to a command prior to a heading operation nor such a rod being with drawn by such control means after the heading operation. In response the examiner points out that as shown in figures 6, 8 and 9, and admitted to by the Appellants at page 4 of the Brief, cavities 51 and 52 are created in a first step as shown in figure 6 after which rods 63 and 64 are inserted into cavities 51 and 52 and the preform is compressed by a die 62 forming cavities 71 and 72 around rods 63, 64 after which the rods are removed to and the fabrication is completed (see paragraph 0028 of translation). Thus rods 63, 64 serve to substantially maintain the shape of the cavities, however Hiroshi is further introduced to teach that it is known to provide a preform forged product 60 having cavities 22, 24 with an insert rod element 52 during a heading/forging step in order to substantially maintain the cavity shape depending on the desired shape of the final product and complexity of said final product. Regarding a control means, as claimed by the Appellants, Mikito

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teaches the use of a hydraulic oil cylinder (40) to move a rod in and out of the substrate in figure 6, where the Appellants at page 4, lines 35-36 disclose that they claimed control means is a simple cylinder (like that disclosed by Mikito) or any other controller. Therefore, it is the examiner's position that it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide such control means to insert and withdraw the multidirectional rods 63, 64 of Mikito (Figure 8) in order to avoid the need for manual manipulation of cumbersome and/or heavy tool elements and to automate the process, especially since it has been held that broadly automating a formerly manual process is not sufficient to distinguish over the prior art. *In re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958).

At the top of page 5, Appellants further argue that Hiroshi fails to address a multidirectional rod being inserted into a recess or cavity of during a heading operation no the introduction of such a rod by a control means according to a command prior to the heading operation and the removal of such a rod after the heading operation by the control means since the insert of Hiroshi remains in the core during the casting and forging phase. In response the examiner points out that Hiroshi is merely relied upon to teach the use of inserts in a heading/forging step of a metal substrate which is inserted into a cavity to substantially hold the shape of the cavity during the processing step. In other words, the examiner is proposing that the shape of rods 63 and 64 be such that a constant shape is substantially maintained of the cavities produced when the perform is manufactured as such would only depend on the desired final product and complexity thereof.

At the middle of page 5, the Appellants further argue that the construction of the Hiroshi insert 50 is such that it teaches away from heating the perform in a furnace as the insert would be damaged. In response the examiner points out that it is not suggested the inserts 63, 64 of Mikito be modified to an insert of Hiroshi but rather that the shape of inserts 63 and 64 be such that the shape of the cavities of Mikito are substantially maintained.

Starting at the bottom of page 5 and into page 6, it is once again argued that neither reference discloses a control means as claimed, nor is there reason to insert and remove a multi-direction rod after the heading operation by a control means. In response the examiner points out that it is not the Hiroshi reference which is being modified and insertion and subsequent removal of insert 50 in the teachings of Hiroshi is not germane to the rejection, but rather rods 63 and 64 of Mikito are inserted and withdrawn as claimed (see last two lines of paragraph 0028 of translation of Mikito), while the control means and reasons for incorporating such a control with the rods are obvious as stated above.

At the bottom of page 6, it is argued that there is no disclosure, teaching or suggestion that the perform is transferred to a tunnel furnace as claimed and since the metal of Mikito is semi-liquid there is no reason to believe that placing the perform in a furnace would provide any benefit. It is also argued that if the perform of Hiroshi was put through such a furnace then insert 50 would be destroyed. In response the examiner points out that Mikito suggests that his preform is heated between the steps of figure 6 and 8 (see translation, paragraph 0028) therefore taking applicants admission that it is



known to use tunnel furnaces to heat a preform to ensure a uniform temperature (page 4, lines 10 to 19, of the specification) along with Mikito's suggestion of heating the preform, the use of a tunnel furnace to heat the preform of Mikito would have been obvious for the purpose of ensuring a uniform temperature at the time of forging and the desired consistency of the metal substrate.

At the top of page 7 it is argued that there is no reason to combine the references of Mikito and Hiroshi. In response the examiner points out that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both references are concerned with forged metal products, while Hiroshi's use of a insert 50 which allows the shape of cavities 22 and 24 to substantially remain unchanged during a forging step is an improvement over the prior art in that it allows for a easy, inexpensive forging process of a metallic part having a complex shape without a reduction in strength (see purpose of Hiroshi in abstract).

At page 8 thru page 9, it is argued that Mikito does not disclose all claimed elements. Specifically, it is argued that there is no control means including a rod translation mechanism which is positioned around a heading die receiving a foundry preform. In response it is pointed out that claim 2 is a product claim and therefore the method steps of parent claim 1 do not serve to patentably distinguish the claim. The

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structural limitations are all encompassed in Mikito (figure 6), for example, a multidirectional rod is shown as member 38, a heading die is shown as die 35, while the control means is shown as oil cylinder 40. Therefore, claims 2 and 4 are anticipated by Mikito.

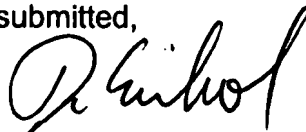
**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Dmitry Suhol

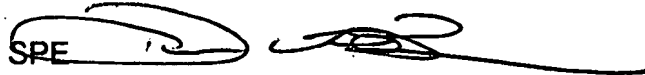


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